

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 10, and 11 in accordance with the following:

1. (CURRENTLY AMENDED) A paper processing device which ~~includes~~ has a discriminating portion sensing papers passing by a specified sensor, and by carrying out a discriminating process according to a result of the sensing, applying one of plurally classified discriminating results to the sensed papers, and wherein, at least one paper that is an objective of a paper processing process is transferred one by one along a transfer route that passes through the discriminating portion, and transfer routes of each paper after passing through the discriminating portion is changed according to discriminating results at the discriminating portion, the paper processing device comprising:

a sensor output abnormality detecting portion that carries out a detecting process to detect that an output of the sensor is in a specified abnormal status according to the output of the sensor before a start of the paper processing process, and when the specified abnormal status is detected in the detecting process conducted before the start of the one process, further carries out a detecting process to detect the output of the sensor also after the start of the paper processing process; and

a transfer control portion that starts the paper processing process even when either of the specified abnormal status or normal status is detected in an initial detecting process conducted before the start of the paper processing process by the sensor output abnormality detecting portion, and in the case where the specified abnormal status is detected in the initial detecting process, transfers at least one paper that passes through the discriminating portion after the start of the paper processing process until a normal status is detected in the detecting process of the sensor output carried out after the start of the paper processing process, along a transfer route corresponding to the specified abnormal status after the at least one paper passes through the discriminating portion,

wherein the sensor is cleaned by transfer of paper, and sensor cleaning and the paper processing process are accomplished in parallel.

2. (PREVIOUSLY PRESENTED) The paper processing device according to claim 1, wherein:

one of the discriminating results is that a paper is abnormal; and

the transfer control portion transfers, in the case where the specified abnormal status is detected in the initial detecting process conducted before the start of the paper processing process by the sensor output abnormality detecting portion, at least one paper that passes through the discriminating portion after the start of the paper processing process and cleans the sensor, until the normal status is detected in the detecting process carried out after the start of the paper processing process, along the same transfer route as the case wherein the discriminating result that a paper is abnormal is obtained at the discriminating portion.

3. (PREVIOUSLY PRESENTED) The paper processing device according to claim 1, further comprising:

a pool portion to store a paper that has been transferred along the transfer route corresponding to the specified abnormal status,

wherein the transfer control portion again transfers paper stored in the pool portion, after the sensor output abnormality detecting portion detects normal status, along the transfer route to pass through the discriminating portion.

4. (PREVIOUSLY PRESENTED) The paper processing device according to claim 1, wherein:

the sensor output abnormality detecting portion carries out the detecting process of the sensor output before the start of the paper processing process, and when the specified abnormal status is detected in the detecting process carried out before the start of the paper processing process, carries out the detecting process when each paper that is the objective of the paper processing process passes through the discriminating portion, after the start of the paper processing process, and carries out the detecting process until one of a number of the papers that passed through the discriminating portion reaches a predetermined number, and

the normal status is detected by the sensor output abnormality detecting portion.

5. (PREVIOUSLY PRESENTED) The paper processing device according to claim 1, wherein:

the sensor output abnormality detecting portion carries out the detecting process of the sensor output before the start of the paper processing process, and when the specified abnormal status is detected in the detecting process carried out before the start of the paper processing process, the transfer control portion starts the paper processing process, and after a predetermined number of papers that are objectives of the paper processing process have passed through the discriminating portion, and the sensor output abnormality detecting portion carries out a detecting process.

6. (PREVIOUSLY PRESENTED) The paper processing device according to claim 1, further comprising:

a pool of mock papers different from the at least one paper that is the objective of the paper processing process, that are transferred along a transfer route passing through the discriminating portion,

wherein the transfer control portion starts the paper processing process after the specified abnormal status is detected in the detecting process carried out before the start of the paper processing process by the sensor output abnormality detecting portion, and if it is detected that recovery to normal status has not been achieved even when the detecting process is carried out at a predetermined time after the start of the paper processing process, after the predetermined time, the transfer control portion suspends transfer of the at least one paper that is the objective of the paper processing process, and transfers the mock papers along a transfer route passing through the discriminating portion, and

the sensor output abnormality detecting portion carries out a detecting process after the mock papers pass through the discriminating portion.

7. (PREVIOUSLY PRESENTED) The paper processing device according to claim 1, wherein:

the sensor is a line sensor comprising a plurality of sensor devices arranged in a width

direction crossing a paper transfer direction at the discriminating portion, and

the sensor output abnormality detecting portion detects that the output of the sensor is in the specified abnormal status when a predetermined number of the sensor devices among the plurality of sensor devices is faulty.

8. (PREVIOUSLY PRESENTED) The paper processing device according to claim 6, wherein:

for at least the detecting process carried out before the start of the paper processing process, the specified abnormal status is divided into a specified first abnormal status and a specified second abnormal status, and the sensor output abnormality detecting portion carries out the detecting process of the sensor output after the mock papers pass through the discriminating portion, and

the transfer control portion starts the paper processing process when one of the first abnormal status and the normal status is detected in the initial detecting process carried out before the start of paper processing process by the sensor output abnormality detecting portion, while when the second abnormal status is detected in the initial detecting process, the transfer control portion transfers the mock papers along a transfer route passing through the discriminating portion prior to transferring the at least one paper that is the objective of the paper processing process.

9. (PREVIOUSLY PRESENTED) The paper processing device according to claim 8, wherein:

the mock papers are longer with respect to a width direction crossing a transfer direction than the at least one paper that is the objective of the paper processing process,

the sensor is a line sensor comprising a plurality of sensor devices arranged to a position exceeding a passing area of the at least one paper that is the objective of the paper processing process, in the width direction crossing the transfer direction ; and

the sensor output abnormality detecting portion detects that the output of the sensor is in the specified abnormal status when a predetermined number of the sensor devices among the plurality of sensor devices is faulty, and detects the status wherein all the sensor devices with faulty output are sensor devices in the passing area as the first abnormal status, and also

detects the status wherein sensor devices out of the passing area are included in the sensor devices with faulty output as the second abnormal status.

10. (CURRENTLY AMENDED) A paper processing device ~~including~~ having a discriminating unit to sense a passing paper with a sensor, and based on a result of the sensing, apply one of a plurality of predetermined discriminating results to each passing paper, and wherein for a process, at least one paper that is an objective of the process is transferred one by one along a transfer route that passes through the discriminating unit, and each paper's transfer route is changed after passing through the discriminating unit according to the discriminating result for the paper, the paper processing device comprising:

a sensor output abnormality detecting portion to detect whether an output of the sensor is in a specified abnormal status at a beginning of the process, and if the output of the sensor is in the specified abnormal status, also detect the output of the sensor during the process; and

a transfer control unit to start the process, and when the sensor output abnormality detecting portion detects that the output of the sensor is in the specified abnormal status before the process begins, transfer papers through the discriminating unit to clean the sensor until a normal status is detected by the sensor output abnormality detecting portion, along a transfer route corresponding to the specified abnormal status,

wherein the sensor is cleaned by transfer of paper, and sensor cleaning and the paper processing process are accomplished in parallel.

11. (CURRENTLY AMENDED) A paper processing device ~~including~~ having a discriminating unit to sense a passing paper with a sensor, and based on a result of the sensing, apply one of a plurality of predetermined discriminating results to each passing paper, and wherein for a process, at least one paper that is an objective of the process is transferred one by one along a transfer route that passes through the discriminating unit, and each paper's transfer route is changed after passing through the discriminating unit according to the discriminating result for the paper, the paper processing device comprising:

a sensor output abnormality detecting portion to detect a status of an output of the sensor, that evaluates the output of the sensor at the beginning of the process, and if the status is not normal, evaluates the output of the sensor during the process; and

a transfer control unit to start the process, and if the output of the sensor is one of normal and a first abnormal status, transfer at least one paper that is an objective of the process through the discriminating unit to clean the sensor and advance the process towards completion, and if the output of the sensor is a second abnormal status, transfer at least one paper through the discriminating unit to clean the sensor, and transfer at least one paper that is an objective of the process through the discriminating unit to advance the process towards completion,

wherein the sensor is cleaned by transfer of paper, and sensor cleaning and the paper processing process are accomplished in parallel.

12. (PREVIOUSLY PRESENTED) A paper processing device comprising:
a sensor output abnormality detecting portion to detect a status of an output of a sensor, that evaluates the output of the sensor at the beginning of a process, and if the status is not normal, evaluates the output of the sensor during the process; and
a transfer control unit to transfer papers,
wherein sensors are cleaned by the transfer of papers, and sensor cleaning and the process are accomplished in parallel.